

Crime State Rankings 2009

Distribution Analysis

This section, new to *Crime State Rankings 2009*, presents charts depicting the distributions of selected tables contained in this book. The purpose of this section is to provide a mechanism of comparison beyond the rankings. Each chart also displays measures of central tendency such as median, mean, standard deviation, and minimum and maximum values to provide further description of each table's distribution.

Each histogram is formatted as an area chart for easier viewing. Along the bottom (x-axis), the values depict ranges for which the state's values are totaled; along the left (y-axis), the number of states with values in that range is shown. These ranges and frequencies are different for each data distribution. Additional statistics are provided to show each distribution's measures of central tendency. The median indicates the middle value of the distribution, which means that 50 percent of the states have scores or rates above and below that value. The mean is the average value of the distribution. The standard deviation, described generally, is the measure of spread of all the values from the mean. The minimum and maximum values are the lowest and highest values of the distribution, respectively.

These statistics are based on the normal curve, so one standard deviation above and below the mean contains 68 percent of the states, two standard deviations above and below the mean contain 95 percent of the states, and three standard deviations above and below the mean contain 99.7 percent of the states. The purpose of these statistics is descriptive, and together they assist the reader in understanding all the states' values as well as where an individual state sits relative to the others. For example, in Figure 1, State Comparison Score Distribution Analysis for 2007, the statistics for the state comparison scores are interpreted as follows:

- The lowest comparison score for states is -61.1 .
- The highest comparison score for states is 64.1 .
- The range of scores (maximum minus minimum) is 125.2 .
- 50 percent of the states have comparison scores lower than -14.4 , and 50 percent have scores higher than -14.4 .
- The average comparison score for states is -9.8 and the standard deviation is 31.6 .
- 68 percent of the states have scores between -41.4 and 21.8 .
- 95 percent of the states have scores between -73.0 and 53.4 .
- 99.7 percent of the states have scores between -104.6 and 85.0 . (The fact that the lower end of this and the previous range are less than the minimum value of the distribution indicates the distribution is skewed.)

Figure 1 can also be used to assess a single state. For example, Utah's value (-31.0) indicates that it is lower than 50 percent of all the scores (below the median of -14.4) and

falls within the first standard deviation of the mean with 68 percent of the other scores (between -41.4 and 21.8).

The remainder of this section presents histograms and the noted statistics for the analyses listed below:

- Figure 1. State Comparison Score Distribution Analysis for 2007
- Figure 2. State Reported Murder Rate Distribution Analysis for 2007
- Figure 3. State Reported Rape Rate Distribution Analysis for 2007
- Figure 4. State Reported Robbery Rate Distribution Analysis for 2007
- Figure 5. State Reported Aggravated Assault Rate Distribution Analysis for 2007
- Figure 6. State Reported Burglary Rate Distribution Analysis for 2007
- Figure 7. State Reported Auto Theft Rate Distribution Analysis for 2007

A word of caution: These distribution analysis histograms and statistics are provided to help the reader understand the nature of the values within each analysis, but the analyses are based on data that must be interpreted within the constraints noted in the introduction. These charts are only descriptions of the data and do not provide prediction or explanation of why these values are different across states.

—Rachel Boba

Figure 1 State Comparison Score Distribution Analysis for 2007

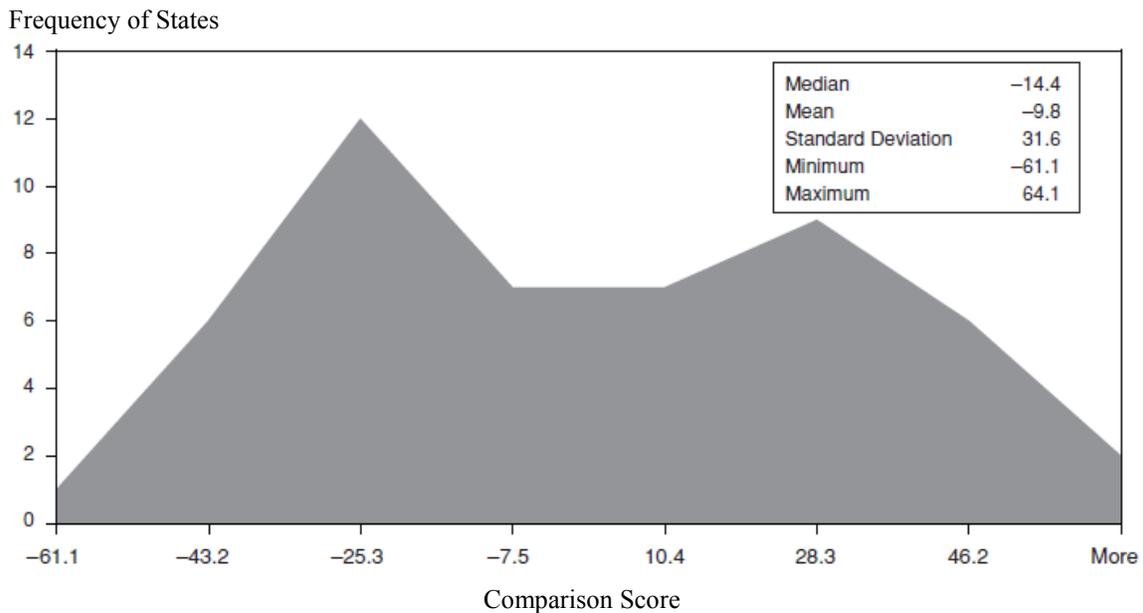


Figure 2 State Reported Murder Rate Distribution Analysis for 2007

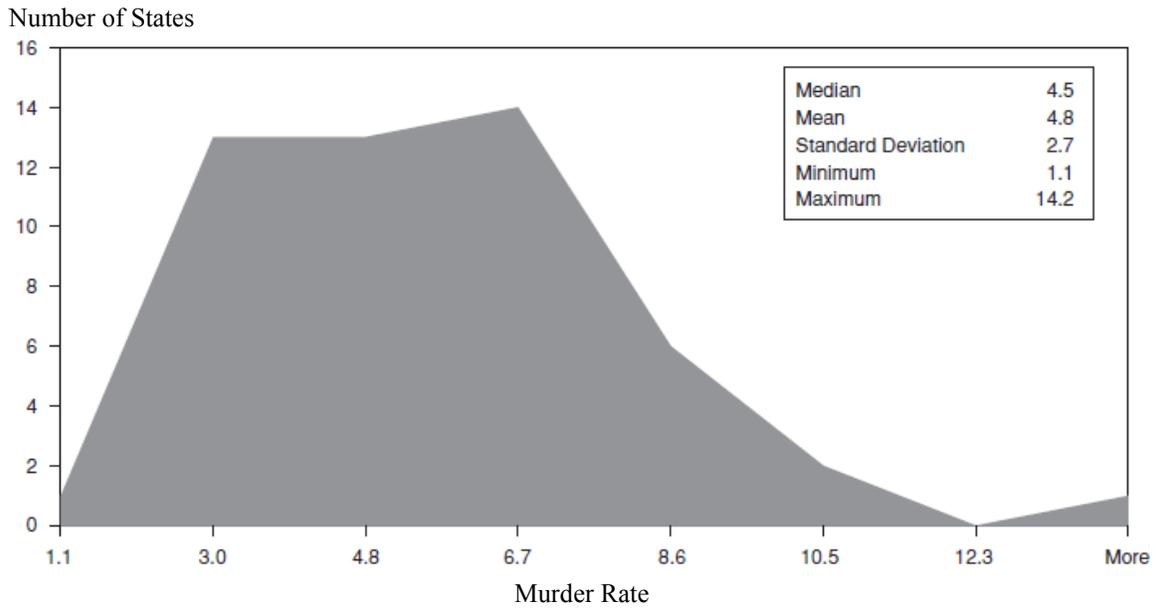


Figure 3 State Reported Rape Rate Distribution Analysis for 2007

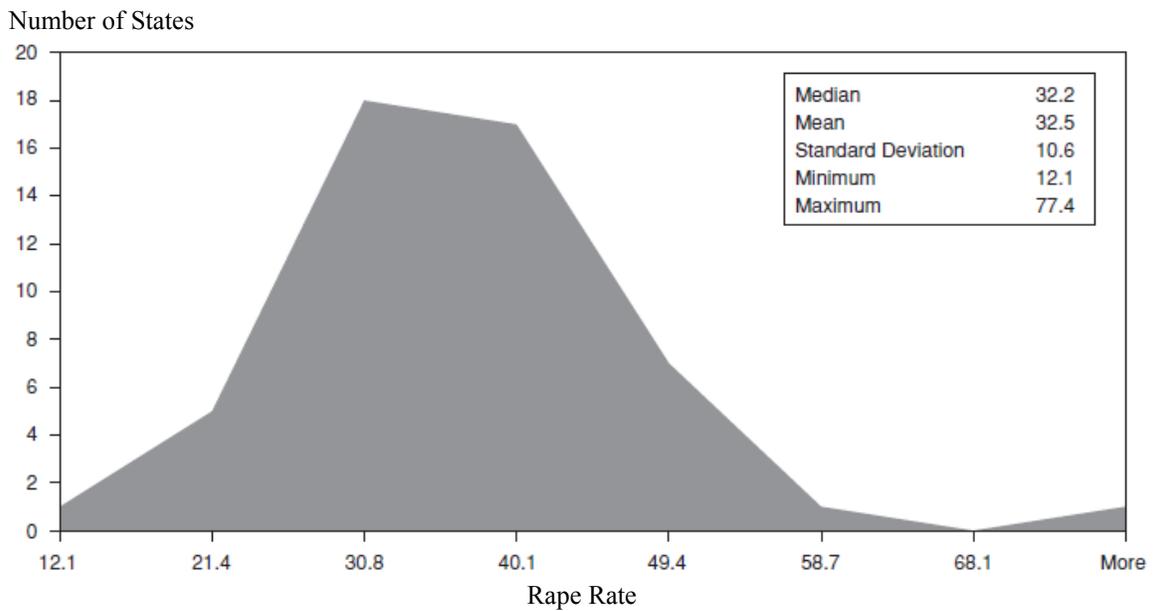


Figure 4 State Reported Robbery Rate Distribution Analysis for 2007

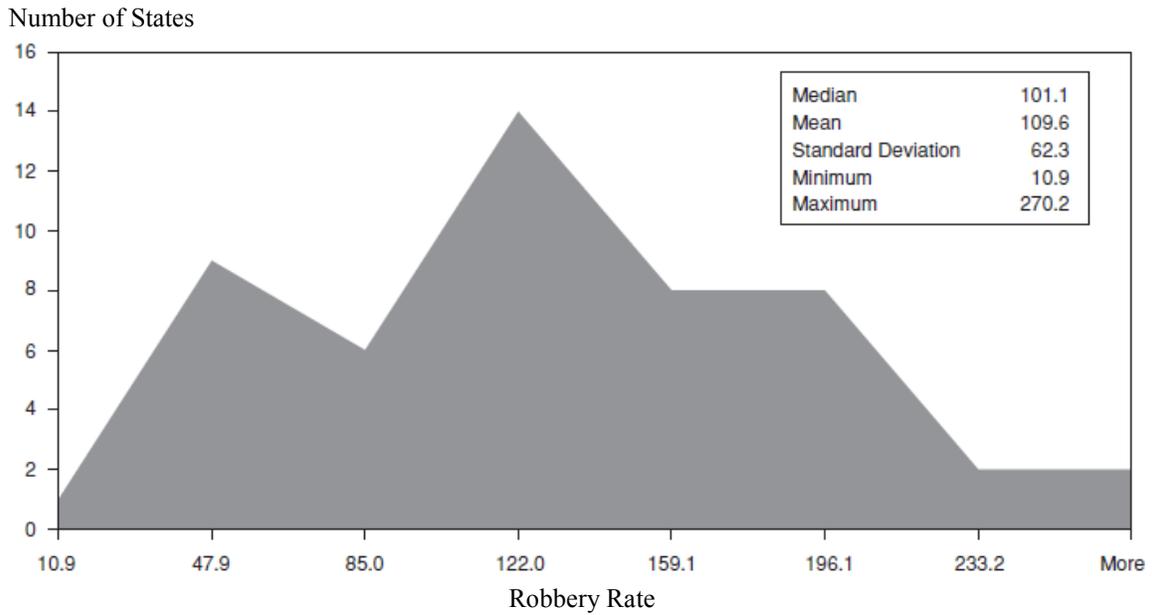


Figure 5 State Reported Aggravated Assault Rate Distribution Analysis for 2007

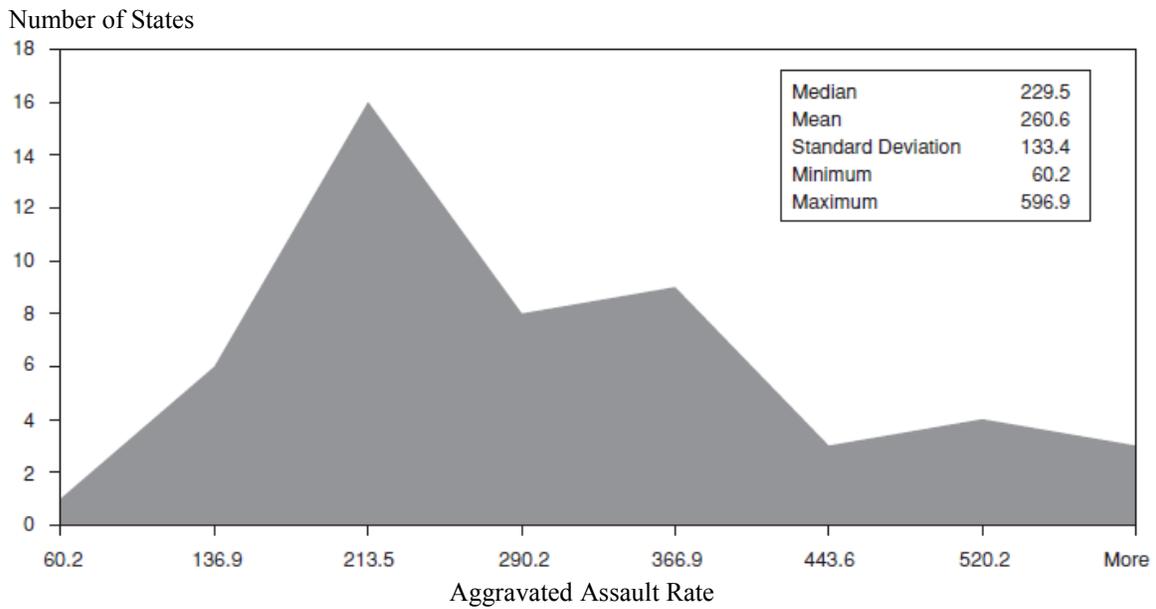


Figure 6 State Reported Burglary Rate Distribution Analysis for 2007

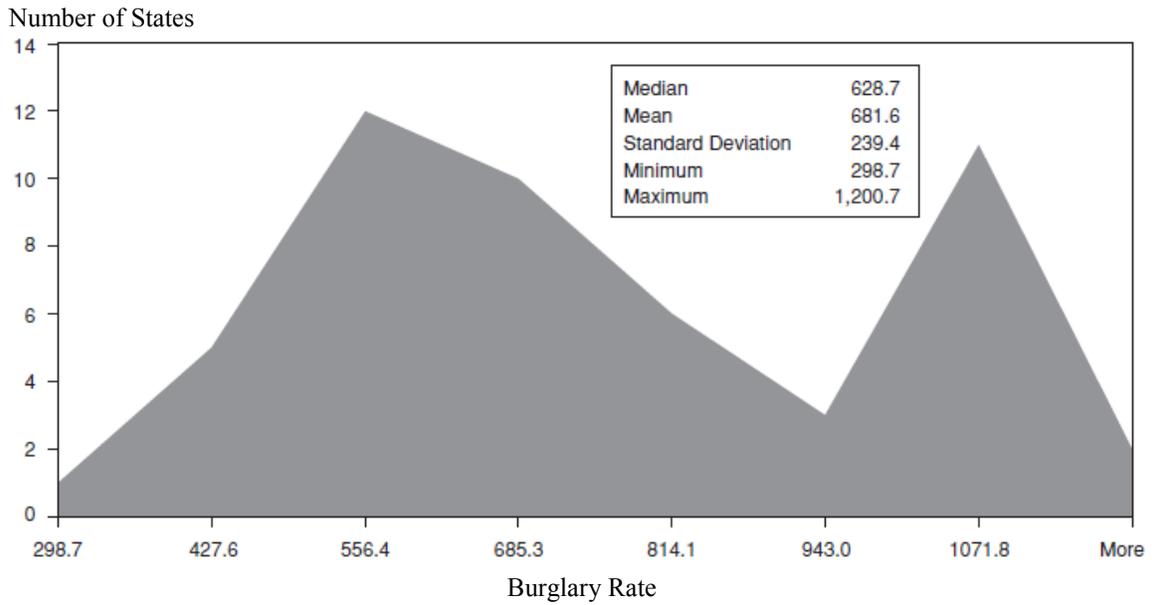


Figure 7 State Reported Auto Theft Rate Distribution Analysis for 2007

